

WHAT IS CLAIMED IS:

- 1 1. A mobile terminal which transmits, over an air interface to a power status
2 repository of a wireless local area network (LAN), power status information, the power
3 status information having an indication of whether the mobile terminal is currently
4 operating using battery power or line power.

- 1 2. The mobile terminal of claim 1, wherein the power status information is
2 transmitted at one of the following times: (1) upon power-up of the mobile terminal;
3 (2) upon command issued from the power status repository; (3) upon establishment of a
4 connection between the mobile terminal and the LAN; and (4) upon a change in power
5 status for the mobile terminal.

- 1 3. The mobile terminal of claim 1, wherein the power status information is
2 transmitted as a dedicated message.

- 1 4. The mobile terminal of claim 1, wherein the power status information is
2 included in a message with other status information.

- 1 5. The mobile terminal of claim 1, wherein the power status repository is an
2 access point of the wireless local area network.

- 1 6. The mobile terminal of claim 1, wherein the wireless local area network is an
2 ad hoc network and wherein the power status repository is another mobile terminal
3 participating in the network.

- 1 7. A wireless local area network (LAN) comprising a mobile terminal which
2 communicates over an air interface with a power status repository; wherein
3 the mobile terminal transmits power status information over the air interface to
4 the power status repository, the power status information having an indication of
5 whether the mobile terminal is currently operating using battery power or line power;
6 the power status repository uses the power status information to determine when
7 to transmit a frequency measurement command to the mobile terminal to request the
8 mobile terminal to make measurements regarding a radio frequency.

1 8. The network of claim 7, wherein the power status repository transmits a
2 frequency measurement command more often to the mobile terminal when the mobile
3 terminal (MT) is using line power than when the mobile terminal is using battery
4 power.

1 9. The network of claim 7, wherein the power status information is transmitted
2 at one of the following times: (1) upon power-up of the mobile terminal; (2) upon
3 command issued from the power status repository; (3) upon establishment of a
4 connection between the mobile terminal and the LAN; and (4) upon a change in power
5 status for the mobile terminal.

1 10. The network of claim 7, wherein the power status information is transmitted
2 as a dedicated message.

1 11. The network of claim 7, wherein the power status information is included in
2 a message with other status information.

1 12. The network of claim 7, wherein the power status repository is an access
2 point of the wireless local area network.

1 13. The network of claim 7, wherein the wireless local area network is an ad
2 hoc network and wherein the power status repository is another mobile terminal
3 participating in the network.

1 14. A method of operating a wireless local area network (LAN) comprising a
2 mobile terminal which communicates over an air interface with a power status
3 repository; the method comprising:

4 the mobile terminal transmitting power status information over the air interface
5 to the power status repository, the power status information having an indication of
6 whether the mobile terminal is currently operating using battery power or line power;

7 the power status repository using the power status information to determine
8 when to transmit a frequency measurement command to the mobile terminal to request
9 the mobile terminal to make measurements regarding a radio frequency.

1 15. The method of claim 14, further comprising the power status repository
2 transmitting a frequency measurement command more often to the mobile terminal
3 when the mobile terminal is using line power than when the mobile terminal is using
4 battery power.

1 16. The method of claim 14, further comprising transmitting the power status
2 information at one of the following times: (1) upon power-up of the mobile terminal;
3 (2) upon command issued from the power status repository; (3) upon establishment of a
4 connection between the mobile terminal and the LAN; and (4) upon a change in power
5 status for the mobile terminal.

1 17. The method of claim 14, further comprising transmitting the power status
2 information as a dedicated message.

1 18. The method of claim 14, further comprising transmitting the power status
2 information in a message with other status information.

1 19. The method of claim 14, further comprising using an access point of the
2 wireless local area network as the power status repository.

1 20. The method of claim 7, wherein the wireless local area network is an ad hoc
2 network, and wherein the method further comprises using another mobile terminal
3 participating in the network as the power status repository.

1 21. A mobile terminal which transmits, over an air interface to a power status
2 repository of a wireless local area network (LAN), measurement capability information,
3 the measurement capability information having an indication of whether the mobile
4 terminal has a capacity to perform radio frequency measurements.

1 22. The mobile terminal of claim 21, wherein the measurement capability
2 information indicates one of low power of the mobile terminal or a power restriction on
3 the mobile terminal.

1 23. The mobile terminal of claim 21, wherein the measurement capability
2 information indicates a sleep mode of the mobile terminal.

1 24. The mobile terminal of claim 21, wherein the measurement capability
2 information is transmitted as a dedicated message.

1 25. The mobile terminal of claim 21, wherein the measurement capability
2 information is included in a message with other status information.

1 26. The mobile terminal of claim 21, wherein the power status repository is an
2 access point of the wireless local area network.

1 27. The mobile terminal of claim 21, wherein the wireless local area network is
2 an ad hoc network and wherein the power status repository is another mobile terminal
3 participating in the network.

1 28. A wireless local area network (LAN) comprising a mobile terminal which
2 communicates over an air interface with a power status repository, wherein the mobile
3 terminal transmits measurement capability information over the air interface to the
4 power status repository, the measurement capability information having an indication of
5 whether the mobile terminal has a power capacity to perform radio frequency
6 measurements.

1 29. The network of claim 28, wherein if the power status repository does not
2 have sufficient measurements regarding radio frequency, the power status repository
3 modifies a rate at which a frequency measurement command is transmitted to another
4 mobile terminal.

1 30. The network of claim 28, wherein the power status repository increases a
2 rate at which a frequency measurement command is transmitted to another mobile
3 terminal.

1 31. The network of claim 28, wherein the measurement capability information
2 indicates one of low power of the mobile terminal or a power restriction on the mobile
3 terminal.

1 32. The network of claim 28, wherein the measurement capability information
2 indicates a sleep mode of the mobile terminal.

1 33. The network of claim 28, wherein the measurement capability information
2 is transmitted as a dedicated message.

1 34. The network of claim 28, wherein the measurement capability information
2 is included in a message with other status information.

1 35. The network of claim 28, wherein the power status repository is an access
2 point of the wireless local area network.

1 36. The network of claim 28, wherein the wireless local area network is an ad
2 hoc network and wherein the power status repository is another mobile terminal
3 participating in the network.

1 37. A method of operating a wireless local area network (LAN) comprising a
2 mobile terminal which communicates over an air interface with a power status
3 repository; the method comprising:

4 the mobile terminal transmitting measurement capability information over the air
5 interface to the power status repository, the measurement capability information having
6 an indication of whether the mobile terminal has a power capacity to perform radio
7 frequency measurements;

8 the power status repository using the measurement capability information to
9 determine whether to transmit a frequency measurement command to the mobile
10 terminal to request the mobile terminal to make measurements regarding a radio
11 frequency.

1 38. The method of claim 37, wherein if the power status repository does not
2 have sufficient measurements regarding radio frequency, the power status repository
3 modifies a rate at which a frequency measurement command is transmitted to another
4 mobile terminal.

1 39. The method of claim 38, wherein the power status repository increases a
2 rate at which a frequency measurement command is transmitted to another mobile
3 terminal.

1 40. The method of claim 37, further comprising transmitting the measurement
2 capacity information as a dedicated message.

1 41. The method of claim 37, further comprising including in the measurement
2 capability information an indication of one of low power of the mobile terminal and a
3 power restriction on the mobile terminal.

1 42. The network of claim 37, further comprising including in the measurement
2 capability information an indication of a sleep mode of the mobile terminal.

1 43. The method of claim 37, further comprising transmitting the measurement
2 capacity information in a message with other status information.

1 44. The method of claim 37, further comprising using an access point of the
2 wireless local area network as the power status repository.

1 45. The method of claim 37, wherein the wireless local area network is an ad
2 hoc network, and wherein the method further comprises using another mobile terminal
3 participating in the network as the power status repository.

1 46. A mobile terminal which transmits information over an air interface to
2 power status repository of a wireless local area network (LAN), and wherein the mobile
3 terminal determines a duration of a sleep cycle in accordance with power status
4 information of the mobile terminal, the power status information having an indication of
5 whether the mobile terminal is currently operating using battery power or line power.

1 47. The mobile terminal of claim 46, wherein the power status repository is an
2 access point of the wireless local area network.

1 48. The mobile terminal of claim 46, wherein the wireless local area network is
2 an ad hoc network and wherein the power status repository is another mobile terminal
3 participating in the network.

1 49. A wireless local area network (LAN) comprising:
2 a power status repository;
3 plural mobile terminals which communicate over an air interface with the power
4 status repository;
5 wherein if the power status repository does not have sufficient measurements
6 from the plural mobile terminals in view of incapacity of one or more of the plural
7 mobile terminals to perform a frequency measurement regarding radio frequency, the
8 power status repository modifies a rate at which a frequency measurement command is
9 transmitted to any of the mobile terminals which have sufficient capacity to perform the
10 frequency measurement.

1 50. The network of claim 49, wherein the power status repository increases a
2 rate at which a frequency measurement command is transmitted to the mobile terminals
3 which have sufficient capacity to perform the frequency measurement.

1 51. The network of claim 49, wherein the power status repository is an access
2 point of the wireless local area network.

1 52. The network of claim 49, wherein the wireless local area network is an ad
2 hoc network and wherein the power status repository is another mobile terminal
3 participating in the network.

1 53. A method of operating a wireless local area network (LAN) having plural
2 mobile terminals which communicate over an air interface with a power status
3 repository, the method comprising:

4 making a determination whether the power status repository has sufficient
5 measurements from the plural mobile terminals in view of incapacity of one or more of
6 the plural mobile terminals to perform a frequency measurement regarding radio
7 frequency; and if the determination is negative;

8 modifying a rate at which a frequency measurement command is transmitted
9 from the power status repository to any of the mobile terminals which have sufficient
10 capacity to perform the frequency measurement.

1 54. The method of claim 53, further comprising the power status repository
2 increasing a rate at which a frequency measurement command is transmitted to the
3 mobile terminals which have sufficient capacity to perform the frequency measurement
4 if the determination is negative.

1 55. The method of claim 53, further comprising using an access point of the
2 wireless local area network as the power status repository.

1 56. The method of claim 53, wherein the wireless local area network is an ad
2 hoc network, and wherein the method further comprises using another mobile terminal
3 participating in the network as the power status repository.